ELIZAVETA (LIZA) ROZENBERG

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EDUCATION

Princeton University, Princeton, NJ Expected June 2022

A.B. Physics; Intended Certificate: Applied & Computational Mathematics

Relevant Coursework: Classical Mechanics, Advanced Electromagnetism, Thermal Physics, Quantum Mechanics, Advanced General Relativity, Mathematical Methods of Physics, Quantum Field Theory, Accelerated Honors Analysis, Algebra I, Advanced Vector Calculus, Fourier Analysis, Differential Geometry, Topology, Complex Analysis, Probability and Stochastic Systems, Riemann Surfaces, Partial Differential Equations, Philosophy of Physics

Honors:

The Manfred Pyka Memorial Physics Prize (July 2020, July 2021) – prize is given to outstanding Physics undergraduates who have shown excellence in course work and promise in independent research.

The Bell-Burnell Physics Award (July 2019, July 2020) – aim of award is to inspire future generations of women scientists.

RESEARCH EXPERIENCE

Senior Thesis Research with Prof. Juan Maldacena June 2021 - present

- Obtained an exact expression for the quantum gravity 4-point function in JT gravity, analyzed its large time behavior and other limiting behaviors to understand what quantum features remain and why
- Working to understanding boundary propagators for supersymmetric actions, in particular N=2

Junior Year Spring Research with Prof. Igor Klebanov February – May 2021

- Obtained exact expressions for free energy and 2-point functions in the large N limit for real, complex and Grassmann tensor models
- Learned how to use perturbative expansion and Feynman graphs for analysis of these objects

Junior Year Fall Research with Prof. Herman Verlinde September – December 2020

- Studied the Unruh effect in Rindler space and explored its extension to the Hawking effect in curved space
- Developed a mathematical analogy between Rindler space and optical cavity to show how the equivalent of Unruh temperature can be detected in a laboratory setting

Summer research in Cosmology lab with Prof. Suzanne Staggs June – August 2019

- Made a short checker for 51 pin connectors controlled by Raspberry Pi
- Designed a printed circuit board for ultra-low current MMB probing box controlled by Arduino

WORK EXPERIENCE

Library Work at Lewis Library, February 2021 - present
Princeton, NJ – Student assistant

- Staffed a help desk at the library

Physics Tutoring at Princeton University, September 2020 – present
Princeton, NJ – Tutor

- Helped students better understand material in advanced physics courses such as Classical Mechanics, Advanced Electromagentism, and Quantum Mechanics

ACTIVITIES

Undergraduate Women in Physics Society – Events Chair January – December 2019

- Organized events for the society, including faculty talks, research symposiums, and grad school panels

Princeton University Puzzle Hunt - Writer November 2018 – present

- Wrote puzzles for participants to solve using logic, general knowledge, and internet resources

SKILLS

Technology: Java, Python, Arduino, Mathematica, Qiskit, Q#
Languages: English (fluent), Russian (fluent), Spanish (advanced), French (conversational)